Amendments to the Claims:

This listing will replace all prior versions, and listing, of claims in the application.

1. (currently amended) A method of digital processing for predicting thin film dielectric properties, comprising:

a reference data base;

measuring chemical bonding parameters of said thin film dielectric, said measuring chemical bonding parameters comprising Fourier Transform Infrared (FTIR) analysis;

software based algorithms ~~that predict~~ predicting thin film behavioral characteristics based on thin film parameters;

a software based function ~~that combines~~ combining said chemical bonding parameters with said predicted thin film behavioral characteristics, thereby predicting dielectric properties of said thin film;

a data interconnect between said reference data base and said software based algorithms;

a data interconnect between said software based algorithms and said software based function ~~that combines~~ combining said chemical bonding parameters with said predicted thin film behavioral characteristics;

an output medium for outputting said predicted dielectric properties of said thin film;

an input medium to said reference data base for supplying said predicted dielectric properties of said thin film to said reference data base; and

an input medium to said reference data base for supplying said measured chemical bonding parameters of said thin film dielectric of said thin film to said reference data base.

2. (currently amended) The method of claim 1, ~~wherein~~ said chemical bonding parameters ~~of said thin film dielectric that are supplied to said reference data base include~~ comprising user defined attributes ~~for further~~ defining said thin film dielectric.

3. (currently amended) The method of claim 1, ~~wherein for each thin film dielectric~~ said reference data base ~~contains~~ comprising ~~different types of~~ data segments for defining thin film dielectrics, ~~wherein~~ said reference data base ~~provides~~ comprising an indication of [[the]] different types of data defining thin film dielectrics.

4. (currently amended) The method of claim 1 wherein said input medium to said reference data base for supplying said predicted dielectric properties ~~of said thin film to said reference data base~~ and said input medium to said reference data base for supplying said measured chemical bonding parameters of said thin film dielectric ~~of said thin film to said reference data base~~ stores different stages of calculation results in said reference library, whereby said behavioral prediction algorithms use stored values of the measured chemical bonding parameters and said predicted dielectric properties.

5. (currently amended) The method of claim 1, ~~whereby~~ said behavioral prediction algorithm [[uses]] comprising mixing and splitting rules ~~to predict~~ predicting at least one [[of]] mixing and splitting of thin film dielectric prediction.

6. (currently amended) An apparatus of a digital processor for predicting thin film dielectric properties, comprising:

input means for enabling user definition of a desired thin film dielectric formed of a multiplicity of streams of data elements, including at least one thin film dielectric component, said user definition comprising chemical bonding measurements,

said chemical bonding measurements having been performed using Fourier Transform Infrared (FTIR) analysis;

a data assembly coupled to said input means for holding data of the desired thin film dielectric, for each thin film dielectric the data assembly representing the thin film dielectric as a collection of segments and a set of attributes, the collection of segments and set of attributes defining the thin film dielectric, the data assembly utilizing an attribute set table that provides thin film dielectric characteristics in a standardized manner from one thin film dielectric to another and provides distribution function information for describing thin film dielectric properties, such that said table specifies properties of one or more thin film dielectrics to support predicting of a variety of thin film dielectrics;

means for placing and holding data of the desired thin film dielectric in said data assembly coupled to said input means for each thin film dielectric; and

processor means for predicting thin film dielectric properties by mathematically modeling stream flow and element operation of the thin film dielectric whereby the mathematical modeling includes predicting thin film properties and attributes values of the thin film dielectric, based on said distribution

functions, said data using data stored in said data assembly according to the attribute set table.

7. (currently amended) The apparatus of claim 6, ~~wherein~~ said user definition of a desired thin film dielectric [[is]] comprising chemical bonding measurements ~~that indicate and reflect~~ for at least one thin film dielectric.

8. (currently amended) The apparatus of claim 6, ~~wherein~~ said user definition of a desired thin film dielectric ~~further includes~~ comprising user defined attributes for ~~further~~ definition of said thin film dielectric.

9. (currently amended) The apparatus of claim 6, ~~wherein~~ said data assembly ~~provides~~ comprising ~~different types of~~ segments for defining a thin film dielectric and, for [[each]] a thin film dielectric, ~~provides~~ comprising an indication of the ~~different types of~~ segments defining said thin film dielectric.

10. (currently amended) The apparatus of claim 6, ~~wherein~~ said processing means for predicting thin film dielectric properties ~~further stores~~ storing calculation results of different stages of calculation, such that during mathematical modeling of each

stream, the processor means uses stored values of [[the]] a collection of segments and a set of attributes of [[each]] a thin film dielectric as held in said data assembly.

11. (currently amended) The apparatus of claim 6 wherein said processor means further utilizes mixing and splitting rules to mathematically predict at least one [[of]] mixing and splitting of streams.

12. (original) The apparatus of claim 6 with the addition of the means to place and hold predicted data of the desired thin film dielectric in said data assembly coupled to an input means to said data assembly for each thin film dielectric.

13. (currently amended) A method applied using a digital processor for predicting thin film dielectric properties, comprising:

providing input means to the digital processor for enabling user definition of a desired thin film dielectric formed of a multiplicity of streams of data elements, including at least one thin film dielectric component, said user definition comprising chemical bonding measurements, said chemical bonding

measurements having been performed using Fourier Transform Infrared (FTIR) analysis;

providing a data assembly coupled to said input means for holding data of the desired thin film dielectric, for each thin film dielectric the data assembly representing the thin film dielectric as a collection of segments and a set of attributes, the collection of segments and set of attributes defining the thin film dielectric, the data assembly utilizing an attribute set table that provides thin film dielectric characteristics in a standardized manner from one thin film dielectric to another and provides distribution function information for describing thin film dielectric properties, such that said table specifies providing properties of one or more thin film dielectrics to support predicting of a variety of thin film dielectrics;

providing processor means for predicting thin film properties by mathematically modeling stream flow and element operation of the thin film dielectric whereby the mathematical modeling includes predicting thin film properties and attributes values of the thin film dielectric, based on said distribution functions, said data using data stored in said data assembly according to the attribute set table; and

providing the means to place and hold predicted data of the desired thin film dielectric in said data assembly coupled to

providing an input means to said data assembly for each thin film dielectric.

14. (currently amended) The method of claim 13, ~~wherein~~ said user definition of a desired thin film dielectric [[is]] comprising chemical bonding measurements ~~that indicate and reflect~~ for at least one thin film dielectric.

15. (currently amended) The method of claim 13, ~~wherein~~ said user definition of a desired thin film dielectric ~~further includes~~ comprising user defined attributes ~~for further definition~~ of said thin film dielectric.

16. (currently amended) The method of claim 13, ~~wherein~~ said data assembly ~~provides~~ comprising ~~different types of~~ segments for defining a thin film dielectric, ~~and, for each thin film dielectric, provides~~ comprising an indication of the ~~different types of~~ segments defining said thin film dielectric.

17. (currently amended) The method of claim 13, ~~wherein~~ said processing means ~~further stores~~ storing calculation results of different stages of calculation, such that during mathematical modeling of each stream, the processor means uses stored values

of [[the]] a collection of segments and a set of attributes of each thin film dielectric as held in said data assembly.

18. (currently amended) The method of claim 13 wherein said processor means further utilizes mixing and splitting rules to mathematically predict at least one [[of]] mixing and splitting of streams.